SOV/65-58-12-13/16

AUTHOR: Shmulyakovskiy, Ya. E.

TITLE: Colorimetric Method of Determination of Platinum in Catalysts (Kolorimetricheskiy metod opredeleniya platiny v katalizatorakh)

PERIODICAL: Khimiya i Tekhnologiya Topliv i Masel, 1958, Nr 12, pp 56 - 58 (USSR)

ABSTRACT: The spectro-photometric method for determining platinum in catalysts by absorption in the ultra-violet spectrum is quick, very accurate, and only a small quantity of catalyst has to be used. During the present investigations a photo-colorimeter FEK-M was used. This type of analysis was previously described (Refs. 1 - 5), but the method of chemical treatment of the catalysts was very complex. A platinum catalyst on γ-Al_2O_3 (0.2 to 0.3 g) was roasted for 30 minutes at 1100°C. At this temperature the soluble Al_2O_3 is converted to the insoluble α-Al_2O_3. Rœntgenograms (by N. V. Ivanova) of the platinum catalyst before and after roasting are given in Fig.1 The catalyst sample was treated with 5 ml of aqua regia and was then evaporated to dryness. The samples were washed three times in 1 ml of HCl and the acid each time evaporated

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Colorimetric Method of Determination of Platinum in Catalysts

to dryness to separate the nitric oxides. The platinum is in this way converted to $H_2(PtCl_6)$. After further treatment with HCl, solid particles of insoluble Al_2O_3 remained in the test tube which could be separated on a glass filter No.3 or No.4. The solutions could then be analysed. The glass filter SS-8 was used as a light filter. Results are given in Fig.2. The quantitative relation between the optical density of the solutions and the concentration of the platinum was also tested; experimental details are quoted (Fig.3). A series of spectro-photometric and colorimetric experiments were also carried out (see table) and practically identical results were obtained. The acidity of the standards and of the solvents should be equal. The various stages during the spectro-photometric and colorimetric

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Colorimetric Method of Determination of Platinum in Catalysts

estimation of platinum are shown in Fig.4. The co-operation of M. F. Shnitko is acknowledged. There are 4 Figures, 1 Table and 5 References: 3 English, 1 German and 1 Soviet.

ASSOCIATION: LenNII

Card 3/3

AUTHORS: Shmulyakovskiy, [illegible].E. and Aleksandrov, S.N. SOV/170-59-3-13/20

TITLE: Flame Photometer PF-1 (Plamennoy fotometr PF-1)

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 3, pp 92 - 96 (USSR)

ABSTRACT: Although many foreign firms manufacture flame photometers [Ref. 1 to 6] the Soviet optical industry has not as yet started to produce them. Therefore the authors devised and manufactured a flame photometer which is described and illustrated in the article. In this photometer, named PF-1, the acetylene-air flame is used for spectrum excitation of alkali and alkali earth elements, such as sodium, potassium, lithium, and calcium. The optical part of the photometer consists of two symmetric channels including diaphragms, lenses, thermal filters, interference color filters, and photocells. The emission of the flame is directed to an interference color filter which singles out the proper band in the spectrum and then to the surface of a photocell, which results in arising of electromotive force. The device is provided with four interference color filters for determination of the 4 above-mentioned elements. The emf of the photocell is measured with a mirror galvanometer of the GPZ-2 type. The electric circuit of the photometer is so devised (Figure 2)

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SHMULYAKOVSKIY, Ya. E., Cand Tech Sci -- (diss) "Spectral methods of analysis of catalysts in the aromatization of hydrocarbons." /Moscow/, 1960. 15 pp; (State Order of Lenin Optical Inst im S. I. Vavilov); 150 copies; price not given; (KL,25-60,136)

MASLYANSKIY, G.N.; POTAPOVA, A.A.; AVTONOMOVA, N.Kh.; SHMULYAKOVSKIY, Ya.E.

Synthesis of ethyl benzene by catalytic reforming of narrow gasoline fractions. Neftekhimiia 1 no.2:187-194 Mr-Ap '61. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov, g. Leningrad.
(Benzene)
(Gasoline)

ALEKSANDROV, Aleksandr Nakhimovich, red.; DEMENT'YEVA, Marianna Ivanovna; SHMULYAKOVSKIY, Yakov Emmanuilovich; SEGAL', Z.G., ved. red.; SAFRONOVA, I.M., tekhn.red.

[Methods for analyzing the products of petroleum refining and petrochemical synthesis]Metody issledovaniia produktov neftepererabotki i neftekhimicheskogo sinteza. Leningrad, Gostoptekhizdat, 1962. 231 p. (MIRA 16:1)
(Petroleum products) (Petroleum chemicals)

TURGEL', Ye.O.; RYSKIN, M.I.; SHMULYAKOVSKIY, Ya.E.; RUDOY, S.A.

Analytical control of the process of disproportionation of rosin. Gidroliz. i lesokhim.prom. 16 no.1:19-21 '63. (MIRA 16:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov.

(Oleoresins)

TURGEL', Ye.O.; SHMULYAKOVSKIY, Ya.E.; RUDOY, S.A.

Composition of the fractional distillation products of gum rosin. Gidroliz. i lesokhim. prom. 16 no.5:14-17 '63. (MIRA 17:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov.

BURSIAN, N.R.; DEMENT'YEVA, M.I.; SHMULYAKOVSKIY, Ya.E.

Some problems in the preparation of raw materials for the isomerization process. Khim. i tekh. topl. i masel 9 no.1: 7-12 Ja '64. (MIRA 17:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov.

ORANSKAYA, O.M.; SHMUL'YAKOVSKIY, Ya.E.

Analysis of the chlorination products of ethylene carbonate by infrared spectroscopy. Zhur. prikl. khim. 38 no.7:1626-1629 Jl '65. (MIRA 18:7)

SHMULYAKOVSKIY, Ya.E.; ORANSKAYA, G.M.

Use of infrared spectroscopy in determining isomers of aromatic hydrocarbons. Zhur.prikl. spekt. 2 no.4:367-370 Ap '65.
(MIRA 18:8)

KOVAL', Zh.A.; SHMUL'YAN, I.K.; FROLOV, G.S.

Effect of the material of downcomerless plates on the hydraulic conditions of their performance. Trudy MKHTI no.40:86-90 '63. (MIRA 18:12)

SHMUL'YAN, I.K.; KOVAL', Zh.A.; KUZNETSOV, D.A.

Dynamics of hydraulic processes taking place on the downcomerless mesh plates. Trudy MKHTI no.47:30-34 '64. (MIRA 18:9)

SHMUL'YAN, M.P., dots.

More about the method for analyzing administrative operations.
Nauch.zap.od.kred.-ekon.inst. 6:115-130 '56. (MIRA 11:1)
(Industrial management)

KLEYTMAN, A.I.; SHMUL'YAN, M.V.

Preservative coating for wooden machine parts. Der.prom. 5 no.5: 25 My '56. (MLRA 9:8)

1. Lyuberetskiy zavod sel'skokhozyaystvennogo mashinostroyeniya imeni Ukhtomskogo.
(Wood--Preservation)

1. SHMUL'YAN, M.V. KLEYTMAN, A.I.

2. USSR (600)

4. Wood - Preservation

7. New protective composition for impregnating wooden parts of agricultural machinery. Sel'khozmashina No. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassfied.

SHMUL'YAN, N.V.; KRUGLOVA, O.V.; BONDAR', M., redaktor; VUYEK, M., tekhnicheskiy redaktor

[Productive capacity of machine shops; its calculation and scientific use in machine building factories] Proizvodstvennye moshchnosti mekhanicheskikh tsekhov; raschet i ratsional'noe ispol'zovanie ikh na mashinostroitel'nykh zavodakh. Kiev, Gos. izd-vo tekhn. lit-ry USSR, 1954. 219 p. (MLRA 7:10)
(Machine shops)

1. LANTSMAN, G. M.; SHTUL'YAN, M. V.

2. USSR (600)

4. Mowing Machines

7. Four-roller stand for straightening knife sections from harvesting machines. Sel'khozmashina, No. 4, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

SHUL'YAN, T.L.

Boilers of 420 ton per hour capacity. Biul. tekhn.-ekon. inform. no.8:43-46 '58. (MIRA 11:10)
(Boilers--Design)

S/114/60/000/001/001/008
E194/E455

AUTHORS: Patychenko, V.S., Engineer and Shmul'yan, T.L., Engineer

TITLE: High-Output Boiler Sets Manufactured by the Taganrog Boiler Works "Krasnyy kotel'shchik"

PERIODICAL: Energomashinostroyeniye, 1960, No.1, pp.1-7

TEXT: In order to make power stations more economic, steam conditions are being raised and set outputs increased. Also, capital expenditure can be reduced by burning natural gas or fuel oil. Accordingly, the Taganrog Boiler Works has begun to make large boilers for super-high steam conditions, with outputs ranging, at present, from 420 to 640 tons per hour and later to 950 to 1850 tons per hour. A series of boilers has been completed with an output of 420 tons per hour at 140 atm 570°C; it has three variants, for burning anthracite dust, dry coal, and gas or fuel oil respectively. The first of these boilers, TP-80 (TP-80), employs the usual inverted-U arrangement. The construction has been described in detail in an article by Getalo and Yeremin in Energomashinostroyeniye, 1968, No.5, and so only the briefest of details are given here. Boiler type

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High-Output Boiler Sets Manufactured by the Taganrog Boiler Works „Krasnyy kotel'shchik„

TP-82 (TP-82), designed to burn coal, differs in the following respects from boiler type TP-80. The furnace chamber is not so high and the thermal loading is greater. The lower screen tube arrangement has been altered, particularly below the burners, and the arrangement of the tail-end heating surface is different. The radiation superheater is installed on the front wall of the furnace chamber and the dry method of ash removal is used. The boiler for burning gas or fuel oil, type TGM-84 (TGM-84), is much lighter and cheaper than those for burning anthracite dust or coal. The usual inverted-U arrangement of heating surfaces is used but the horizontal gasway is much reduced and contains only a screen superheater. The downflow shaft contains the convective horizontal superheater and water economizers. Measures taken to deal with corrosion resulting from the high sulphur content of the fuel oil are described. With the different types of fuel, the steam output and steam conditions remain the same, but the special design uses much less metal and reduces the size of the boiler and

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High-Output Boiler Sets Manufactured by the Taganrog Boiler Works „Krasnyy kotel'shchik„

building required. Since 1957, manufacture has commenced of large boilers type ТП-90 (TP-90) with output of 500 tons per hour at a pressure of 140 atm at 570°C with reheat to 570°C. They burn anthracite dust and are intended for operating as a unit with a turbine of 150 MW. The construction of this boiler and the advantages and disadvantages of the T-arrangement of gasways is described in the article by Gol'denfarb and Getalo in Energomashinostroyeniye, 1958, No.11, and is not repeated here. Design work has started on a modified boiler intended to burn dry coal of the Kizel type; this boiler will be known as type ТП-92 (TP-92), and a drawing is given in Fig.3. The furnace volume is smaller and more heavily loaded, and so the boiler is smaller than that intended for burning anthracite dust. Therefore, the ordinary inverted-U arrangement will be used, in combination with a number of new technical features. In this boiler, the secondary reheat is controlled by recirculating flue gases in the lower part of the furnace chamber. The gases are taken off from

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the downflow shaft beyond the water economizers. The project has been completed for a boiler type (TGM-94) ТГМ-94, of special design, intended for burning gas or fuel oil. This set is described in the article by Parshin, Reznik and Kharkin published in this number of the journal (and abstracted). The next series of large boilere manufactured by the Taganrog Works have an output of 640 tons per hour at a pressure of 140 atm and 570°C with reheat to 570°C and are intended for working as a unit with turbines of 200 MW. The first boiler of this kind, type ТП-100 (TP-100), for burning anthracite dust, is being manufactured. It is a further development of the boiler types TP-90 and uses the T-arrangement. The new boilers are 3 m deeper than the old and the thermal loading is higher, being 133000 kcal/m^3hour. Other special features of boiler type TP-100 include cross-arrangement of the pulverized fuel/gas burners in place of angular arrangement, recirculation of gas in the lower part of the furnace when the fuel used is natural gas, thus maintaining constant reheat

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High-Output Boiler Sets Manufactured by the Taganrog Boiler Works „Krasnyy kotel'shchik„

steam temperature and the use of rotating types of regenerative and air heaters. The main characteristics of the boilers type TP-90 and TP-100 are given in Table 3. The Works is attending to new technical problems: supercritical steam conditions of 255 atm with reheat of 585 to 570°C, and the manufacture of boilers for unit sets of 300 to 600 MW are being considered. The first step in this direction is the completed technical design for a boiler with an output of 950 tons per hour, burning anthracite dust, to run as a unit with a turbine of 300 MW. This boiler will be known as type ТПП-110 (TPP-110). The inverted-U arrangement is used in two variants, one having a single furnace and two separate downflow shafts and the other having two separate semi-boilers. The variants are illustrated in Fig.5 and 6. In both types the primary superheater is located in one downflow gasway and the reheat superheater in the other parallel one. However, the method of reheat temperature control is different in the two cases. A number of other

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constructional details are noted and various numerical data are given in Table 4. Both variants use steel 20 for the economizer, steels 1Х18Н12Т(1Kh18N12T) and 12Х2МФСР (12Kh2MFSR) for the output bundles of the superheater and 12ХМФ (12KhMF) for all the remaining heating surfaces. Besides working on the project for a boiler of 950 tons per hour, the Works is making preliminary designs for sets to work with units of 400, 500 and 600 MW. There are 6 figures 4 tables and 2 Soviet references.

Card 6/6

SHMUL'YAN, T.L.

The TP-100 boiler unit with 640 ton-per-hour capacity. Biul.tekh.-ekon.inform. no.7:55-57 '61. (MIRA 14:8)
(Boilers)

SHMUL'YAN, T.L., inzh.

Basic characteristics of high-capacity TKZ boiler units. Teplo-energetika 8 no.12:27-33 D '61. (MIRA 14:12)

1. Zavod "Krasnyy kotel'shchik".
(Boilers)

SHMUL'YAN, Yu. L.

(1) Math

Mathematical Reviews.
Vol. 14 No. 7
July - August, 1953
Analysis.

7-13-54
LL

Šmul'yan, Yu. L. On unconditionally convergent and absolutely convergent series. Uspehi Matem. Nauk (N.S.) 7, no. 6(52), 209–210 (1952). (Russian)

This note contains a standard example showing the inequivalence in l_p spaces of the modes of convergence mentioned in the title. The paper by Dvoretzky and Rogers [Proc. Nat. Acad. Sci. U. S. A. 36, 192–197 (1950); these Rev. 11, 525] is not mentioned in the bibliography.

G. K. Kalisch (Minneapolis, Minn.).

4

1. SHMUL'YAN, Yu. L.

2. USSR (600)

4. Spaces, Generalized

7. Isometric operators with infinite indexes of defect and their orthogonal expansions, Dokl. AN SSSR, 87, No. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

1. SHMUL'YAN, YU.L.

2. USSR (600)

4. Matrixes

7. Riemann's problem with a positively determined matrix, Yu.L. Shmul'ian, Usp.mat. nauk 8 no. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

SHMUL'YAN, Yu. L.

62

Šmul'yan, Yu. L. On holomorphic bounded matrix functions with determinant identically zero. Doklady Akad. Nauk SSSR (N.S.) 93, 625–627 (1953). (Russian)

The author first gives without proof a result for an operator $w(\zeta)$ on a Hilbert space, where in the region G of the complex ζ-plane $w(\zeta)$ is finite-dimensional and holomorphic with norm $\leqq 1$. There is then a finite number r, the "functional rank" of $w(\zeta)$, which is the dimensionality of $w(\zeta)$ for all $\zeta \in G$ except for a set with no limit-point in G; in addition, an explicit representation of $w(\zeta)$ is possible. Taking G to be $|\zeta|<1$, the factorisation $w(\zeta)=w_1(\zeta)w_2(\zeta)$ is shown to be possible, where $\|w_1(\zeta)\| \leqq 1$, $\|w_2(\zeta)\| \leqq 1$, and the range of $w_1(\zeta)$ is a fixed r-dimensional subspace. Assuming further that $w(\zeta)$ is an m-by-m matrix, and that $\det w(\zeta) \equiv 0$, $w_1(\zeta)$ and $w_2(\zeta)$ can be taken to be m-by-r and r-by-m matrices. The paper extends in part results of Potapov [same Doklady (N.S.) 72, 849–852 (1950); these Rev. 13, 736].

F. V. Atkinson (Ibadan).

SHMUL'YAN, Yu.L.

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62

Šmul'yan, Yu. L. Operators with degenerate characteristic functions. Doklady Akad. Nauk SSSR (N.S.) 93, 985–988 (1953). (Russian)

Let V be an isometric operator in a Hilbert space $\mathfrak{H}$, defined on a space G and having a range G'; $D=\mathfrak{H}\ominus G$ and $D'=\mathfrak{H}\ominus G'$ are its deficiency spaces, and T is an "orthogonal extension" of V. The author first gives formulae concerning the "normed characteristic function" of T, which is an operator on D into D' given, under restrictions, by

$$w_H(T,\zeta)=|I-TT^*|^{-1/2}(T-\zeta I)(I-\bar{\zeta}T^*)^{-1}|I-T^*T|^{1/2},$$

including a multiplication theorem for the case when T is formed from orthogonal extensions T_1, T_2 of isometric operators V_1, V_2 in two unitary spaces $\mathfrak{H}_1$, $\mathfrak{H}_2$. [cf. Livšic and Potapov, same Doklady (N.S.) 72, 625–628 (1950);

(over)

these Rev. 11, 669]. This and results of the previously-reviewed paper are applied to prove, in outline, his "basic theorem 2" for an operator T, with $\|T\| \leqq 1$, which is an orthogonal extension of an isometric V with deficiency-indices (m, m) with $m < \infty$, such that every ζ with $|\zeta| < 1$ is a characteristic value of T. Then T has an invariant subspace $\mathfrak{H}_1$, in which the induced operator T_1 is the orthogonal extension of an isometric V_1 with deficiency-indices (m, n) with $m > n$. Also given is a converse proposition, and a result on the vanishing of the characteristic function of a "simple" isometric V with arbitrary deficiency-indices not necessarily finite or equal.

F. V. Atkinson (Ibadan).

SHMUL'YAN, Yu.L.

Riemann problem with a Hermitian matrix. Usp.mat.nauk 9 no.4: 243-248 '54. (MLRA 8:1)
(Matrices)

SHMULYAN, Yu.L.

SUBJECT USSR/MATHEMATICS/Theory of Approximations CARD 1/1 PG - 140
AUTHOR SMULJAN Ju.L.
TITLE Remark to the paper of Ju.M.Gavrilov "On the convergence of iteration processes".
PERIODICAL Izvestija Akad. Nauk, Ser. mat. 19, 191 (1955)
reviewed 7/1956

In the present note the author generalizes a theorem of Ju.M. Gavrilov which is contained in the paper (Izvestija Akad. Nauk, Ser. mat. 18, 87-94 (1954)).

SHMULYAN, Yu. L.

USSR/ Mathematics

Card 1/1 Pub. 22 - 9/51

Authors : Shmulyan, Yu. L.

Title : Perfectly continuous disturbances of operators

Periodical : Dok. AN SSSR 101/1, 35-38, Mar 1, 1955

Abstract : Data are presented regarding the study of the spectrum of a certain A-K operator, where K is the perfectly continuous operator. A series of theorems is proved regarding spectra of operators representing values of regular operator functions when the values represented are perfectly continuous. The results obtained are applied to the theory of quasi-unitary and limited quasi-Hermitian operators. Six references: 4 USSR, 1 Swiss and 1 French (1913-1950).

Institution : The Iv. Franko State Pedagogical Institute, Zhitomir

Presented by: Academician A. N. Kolmogorov, December 14, 1954

[redacted], Yu. L.

Shmul'yan, Yu. L.

"The construction of operators with a point spectrum filling a single circle or semi-plane." Acad Sci U krainian SSR. Inst of Mathematics Kiev. 1956 (Dissertation For the Degree of Candidate In Physicomathematical Sciences.)

Knizhnaya letopis'
[redacted], 1956. Moscow

SHMUL'YAN, Yu.L.

Finite-dimensional operators depending analytically on a parameter [with summary in English]. Ukr.mat.zhur. 9 no.2:195-204 '57. (MIRA 10:7)

(Operators (Mathematics))

AUTHOR: Shmul'yan, Yu.L. (Zhitomir) 20-120-4-10/67

TITLE: The Operator Integral of Hellinger and Some Applications of it (Operatornyy integral Khellingera i nekotoryye yego prilozheniya)

PERIODICAL: Doklady Akademii nauk SSSR,1958,Vol 120,Nr 4,pp 722-725 (USSR)

ABSTRACT: Let $H_1 \oplus H_2$ be an orthogonal decomposition of the unitary space H. Let A_{22} be a nonnegative operator in H_2, A_{12} be an operator from H_2 into H_1, $A_{21} = A_{12}^*$. These three operators are denoted as a system of positive type, in sign

(1) $$\mathcal{A} = \begin{pmatrix} & A_{12} \\ A_{21} & A_{22} \end{pmatrix} ,$$

if $(A_{12} f, A_{12} f) \leqslant C(A_{22} f, f)$, $f \in H_2$, where C denotes a certain constant. This notion is used in order to give necessary and sufficient conditions that an operator A (from H in H) be nonnegative. Furthermore in a measurable space the author considers expressions (1), where the A_{ij} are fully

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The Operator Integral of Hellinger and Some Applications of it

20-120-4-10/67

additive operator functions, and with the aid of them the integration on a set of the space is explained. The corresponding operator is denoted as the integral of Hellinger, and it is shown that it is an operator measure. Several related notions and properties are considered. The author gives a series of definitions and seven theorems with conclusions.
There are 4 references, 3 of which are Soviet, and 1 American.

ASSOCIATION: Zhitomirskiy gosudarstvennyy pedagogicheskiy institut imeni I.Franko (Zhitomir State Pedagogical Institute imeni I.Franko)

PRESENTED: January 29, 1958, by A.N.Kolmogorov, Academician
SUBMITTED: January 20, 1958

1. Operators (Mathematics)--Applications 2. Mathematics

Card 2/2

69775

S/155/59/000/02/016/036

16,4600

AUTHOR: Shmul'yan, Yu. L.

TITLE: The Simplicity of Isometric Operators and Their Extension

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye nauki, 1959, No. 2, pp. 86-94

TEXT: Let H be a unitary space, G and G' subspaces of H, V an isometric operator which maps G onto G', $D = H \ominus G$ and $D' = H \ominus G'$ defective subspaces of V. V is called simple, if it is unitary on no subspace G. The operator T is called orthogonal extension of V, if $T(D) \subseteq D'$. Then it is T^* orthogonal extension of V^{-1}.

Theorem 1: In order that an isometric operator V be simple, it is necessary that every, and sufficient that a certain orthogonal extension T of V satisfies the condition: Every subspace which is invariant with respect to T and T^* and which contains D and D', is identical with H.

Let $A = \begin{pmatrix} A_{11} & A_{12} \\ A_{21} & A_{22} \end{pmatrix}$, $H = H_1 \oplus H_2$, $(A_{ij} f, g) = (Af, g)$, where $f \in H_j$, $g \in H_i$, $ij = 1,2$.

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The Simplicity of Isometric Operators and Their Extension

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Theorem 2: In order that the Hermitean operator A be nonnegative, it is necessary and sufficient that

(3) $A_{22} > 0$, $A_{11} > A_{12} A_{22}^{-1} A_{21}$

Let K be a domain of the complex plane, $\varphi(z)$ a function defined in K the values of which are Hermitean operators in H. $\varphi(z)$ is called harmonic or subharmonic or superharmonic in K, if $(\varphi(z)f,f)$ is harmonic or subharmonic or superharmonic in K for every $f \in H$. The notion of the best harmonic majorant of a subharmonic function is introduced as in (Ref. 3,4). The harmonic function in K

(5) $$\varphi(z) = \begin{pmatrix} \varphi_{11}(z) & \varphi_{12}(z) \\ \varphi_{21}(z) & \varphi_{22}(z) \end{pmatrix} , \quad H = H_1 \oplus H_2$$

is called H_2-extremal, if a) $\varphi(z)$ is nonnegative for all $z \in K$ b) $\varphi_{11}(z)$ for fixed $\varphi_{12}, \varphi_{21}, \varphi_{22}$ is minimum in the class of the harmonic functions

The Simplicity of Isometric Operators and Their Extension

$\varphi_1(z)$ for which $\begin{pmatrix} \varphi_1(z) & \varphi_{12}(z) \\ \varphi_{21}(z) & \varphi_{22}(z) \end{pmatrix}$ is nonnegative.

Theorem 3 : Let (5) be a nonnegative function harmonic in K. Then a) $\widetilde{\varphi}(z) \equiv \varphi_{11}(z) - \varphi_{12}(z)\,\varphi_{22}^{-1}(z)\,\varphi_{21}(z)$ is superharmonic and nonnegative b) for the H_2-extremality it is sufficient and necessary : either

1. $\varphi_{11}(z)$ is the best harmonic majorant of $\varphi_{12}\,\varphi_{22}^{-1}\,\varphi_{21}$ or 2. the best harmonic minorant of $\widetilde{\varphi(z)}$ is everywhere equal to the zero operator.

Theorem 4 : Let U be a unitary operator in $H = H_1 \oplus H_2$, H_2 is assumed to be the generating subspace of U. Then $\phi(z) = \mathrm{Re}\,\frac{U + z\,I}{U - z\,I}$ is H_2 - extremum in the unit circle. Let V be a simple isometric operator, D, D' its defective subspaces, D_1' , D_1' subspaces of D, D', dim D_1 = dim D_1' , let the operator U map D_1 isometrically onto D_1' . The isometric operator $\hat{V}$ is de-

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The Simplicity of Isometric Operators and Their Extension S/155/59/000/02/016/036

fined on $G \oplus D_1$ by : $\hat{V}f = Vf$ $(f \in G)$, $\hat{V}f = uf$ $(f \in D_1)$.

Theorem 5 contains necessary and sufficient conditions for the simplicity of $\hat{V}$.

Theorem 6 asserts that from the simplicity of V_1 and V_2 it follows the simplicity of $V_1 \oplus V_2$.

The author mentions M.S. Livshits, M.G. Kreyn, and I.M. Gel'fand.
There are 5 Soviet references.

ASSOCIATION: Zhitomirskiy gosudarstvennyy pedagogicheskiy institut (Zhitomir State Pedagogical Institute)

SUBMITTED: February 4, 1958 (Uspekhi matematicheskikh nauk)

February 23,1959 (Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye nauki)

Card 4/4

88887

S/044/60/000/007/043/058
C111/C222

16.2000

AUTHOR: Shmul'yan, Yu.L.

TITLE: The semigroup of bounded holomorphic functions

PERIODICAL: Referativnyy zhurnal. Matematika, no.7, 1960, 156-157. Abstract no.7888. Nauk.zap.Zhytomyrs'k.derzh.ped.in-t, 1959, 9, 103-114

TEXT: The paper consists of three paragraphs, where the two first paragraphs contain the algebraic remedies. An Abelian semigroup S is called a cone if S contains the zero, from $x+y = 0$ $(x,y \in S)$ it follows that $x = y = 0$, and from $x+z = y+z$ $(x,y,z \in S)$ it follows that $x = y$. The cone is semiordered by replacing $x,y \in S$ by $x \geq y$ if $x = y+z$ $(z \in S)$. The cone is called an l-cone if for every set consisting of two points $x,y \in S$ there exists the upper limit x y [Abstracter's note: unintelligible]. An l-cone is called complete if in it every set bounded from above has an upper limit. The subcones of a given cone and the decomposition of a cone S into a direct sum of subcones S_1 and S_2 are defined in the natural manner.

§ 3 contains the basic results. Let $R = \{\varphi(z)\}$ be the set of functions $(\not\equiv 0)$ being holomorphic in the unit circle and satisfying the

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The semigroup of bounded...

condition $|\varphi(z)| < 1$. R becomes a cone with respect to the ordinary operation of multiplication if functions are identified which distinguish from eachother by a constant factor with the amount one. The zero of the cone is the function $\mathcal{E} = \mathcal{E}(z) \equiv 1$. Now the partial order $\varphi \gtrdot \psi$ ($\varphi, \psi \in R$) mentioned above means that $\varphi = \psi\chi$ ($\chi \in R$); in this case ψ is called a divisor of φ. Let R_1 denote the subset of R consisting of the functions $\mathcal{E}$ and of all possible Blaschke functions. Let R_2 be the subset of R consisting of functions having no zeros in the unit circle. The cone R is a direct sum of its subcones R_1 and R_2. The cones R_1 and R_2 (and therewith R too) are complete 1-cones (theorems 5 and 6 and conclusion). The divisor ψ of the function $\varphi \in R$ is called φ-admissible if in almost every point e^{it} of the unit circle $|\psi(e^{it})|$ equal either 1 or $|\varphi(e^{it})|$. For the theory of operators the question is essential when the set $D[\varphi]$ of φ-admissible divisors forms a chain, i.e. an ordered set. The answer is given in

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The semigroup of bounded...

Theorem 8: In order that D [φ] is a chain it is necessary and sufficient that φ has one of the following representations: 1) $\varphi(z)=\exp\left(-k\frac{e^{ic}+z}{e^{ic}-z}\right)$ $(0\leqslant c<2\pi,\ k\geqslant 0)$; 2) $\varphi(z)=\left[b_\xi(z)\right]^n$ $(n\geqslant 0;\ |\xi|<1)$, where $b_0(z)=z$ and $b_\xi(z)=\frac{\xi-z}{1-\bar{\xi}z}\,\frac{|\xi|}{\xi}$ $(0<|\xi|<1)$ is the elementary divisor of Blaschke.

[Abstracter's note: The above text is a full translation of the original Soviet abstract.]

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~~16(1)~~ 16.2800

AUTHOR: Shmul'yan, Yu.L. (Zhitomir) SOV/39-49-4-2/6

TITLE: Operator Integral of Hellinger

PERIODICAL: Matematicheskiy sbornik, 1959, Vol 49,Nr 4,pp 381-430 (USSR)

ABSTRACT: The author generalizes the notion of the integral of Hellinger

(0.2) $\int_{M_0} \frac{|\sigma(dM)|^2}{\varsigma(dM)}$

for the case where $\varsigma(M)$ and $\sigma(M)$ are completely additive operator functions, whereby $\varsigma(M)$ is an operator measure. In § 1 the author defines an operator which is an analogue to the expression $\frac{|\sigma|^2}{\varsigma} \sim \sigma \varsigma^{-1} \bar{\sigma}$; The operators τ are assumed to have the property that the matrix $\begin{pmatrix} \tau & \sigma \\ \sigma^* & \varsigma \end{pmatrix}$ defines a nonnegative operator ; then the minimum operator in the class of all τ is the sought analogue of $\frac{|\sigma|^2}{\varsigma}$. For these considerations the author introduces special

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classes of operators : operators of positive type and extremum operators (§ 2). In § 3 the author investigates the limits in the set of the Hermite operators. The results obtained are applied in order to prove the integrability (in the sense of A.N. Kolmogorov) of an operator function semi-additive from above. In § 4 the author constructs the operator integral of Hellinger and investigates its fundamental properties. Here he introduces the notion of the m-convolution of the operator measure. In § 5 and § 6 he considers some applications of the operator integral of Hellinger. Some of the results are already announced by the author in [Ref 14]. Altogether the author gives 53 lemmata and theorems. He mentions M.G. Kreyn and M.S. Livshits.
There are 14 references, 11 of which are Soviet, 2 American, and 1 German.

SUBMITTED: February 10,1958

SHMUL'YAN, Yu.L. (Zhitomir)

Some problems of the theory of operators with a finite range of non-Hermitianism. Mat.sbor. 57 no.1:105-136 My '62. (MIRA 16:5)
(Calculus of operations) (Matrices)

SHMUL'YAN, Yu.L. (Zhitomir)

Reducing Hellinger's operator integral to a Lebesgue integral.
Izv. vys. ucheb. zav.; mat. no.2:164-175 '63. (MIRA 16:3)
(Integrals, Generalized)

SHMUL'IAN, Yu.L.

Operators with absolutely continuous spectra. Usp. mat. nauk 18 no.3:223-230 My-Je '63. (MIRA 16:10)

SHMUL'YAN, Yu.L.

Nonexpanding operators in a finite-dimensional space with indefinite metric. Usp. mat. nauk 18 no.6:225-230 '63. (MIRA 17:3)

SHMUL'YAN, Yu.L. (Odessa)

Optimal factorization of non-negative matrix functions. Teor. veroiat. i ee prim. 9 no.2:382-386 '64 (MIRA 17:7)

BRODSKIY, M.S.; SHMUL'YAN, Yu.L.

Invariant subspaces of a linear operator and the divisors of its characteristic function. Usp. mat.nauk 19 no. 1:143-149 Ja-F '64. (MIRA 17:6)

[redacted]AN, M.L. (Odessa)

Monotone operator functions on a set consisting of a segment and a point. Ukr. mat. zhur. 17 no.1:130-136 '65.
(MIRA 18:3)

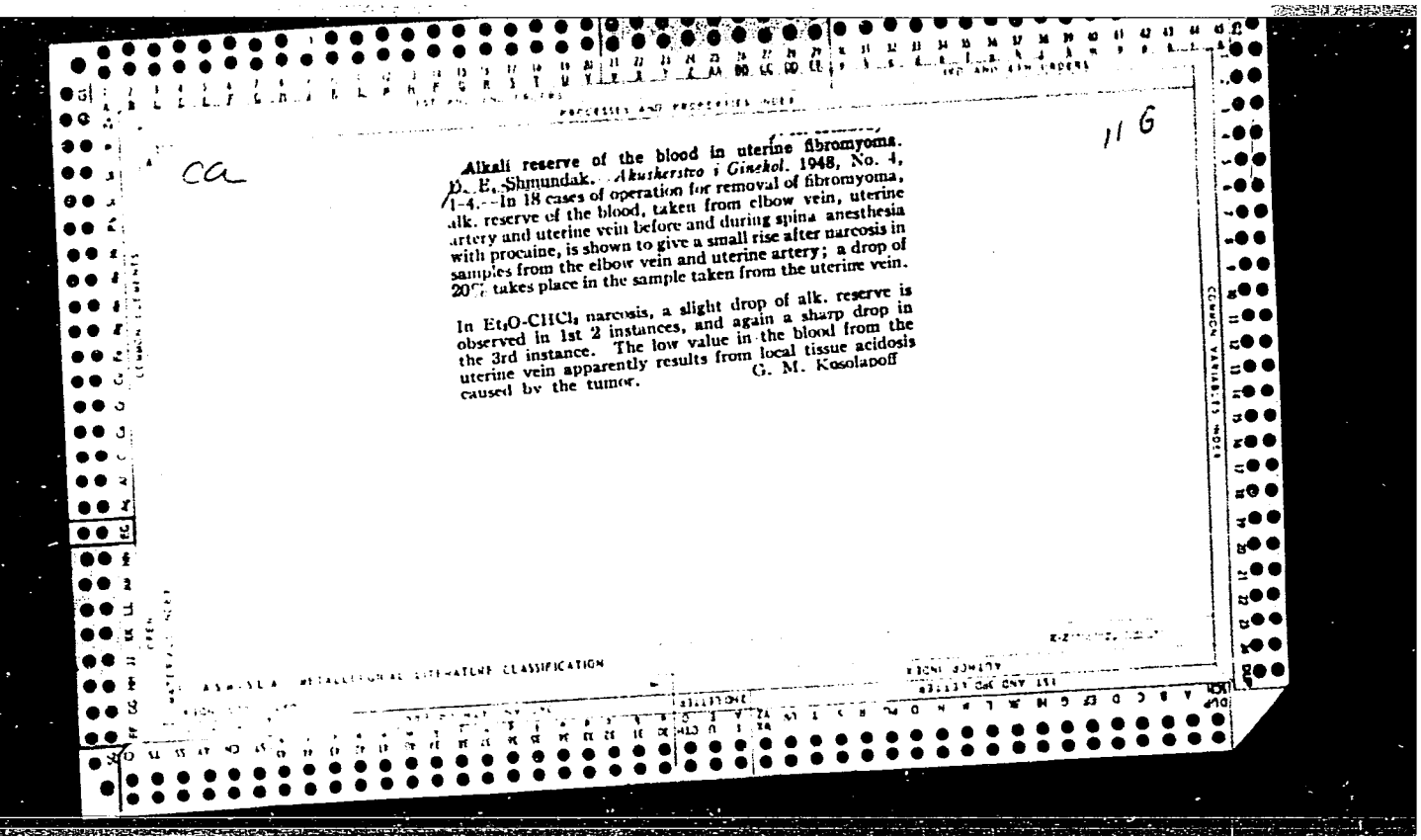
SHMUL'YAN, Yu.L.

Irresolvable n-increasing functions. Usp. mat. nauk 20 no.6: 181-183 N-D '65. (MIRA 18:12)

1. Submitted Nov. 12, 1964.

SHMUNDAK, D.Ye.

Glutathione in the blood in septic puerperal diseases. Vrachebnoe delo 27, 591-6 '47.
(CA 47 no.21:11470 '53)



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11 6

Alkali reserve of the blood in uterine fibromyoma. D. E. Shmundak. *Akusherstvo i Ginekol.* 1948, No. 4, 1-4.--In 18 cases of operation for removal of fibromyoma, alk. reserve of the blood, taken from elbow vein, uterine artery and uterine vein before and during spina anesthesia with procaine, is shown to give a small rise after narcosis in samples from the elbow vein and uterine artery; a drop of 20% takes place in the sample taken from the uterine vein.

In Et_2O-$CHCl_3$ narcosis, a slight drop of alk. reserve is observed in 1st 2 instances, and again a sharp drop in the 3rd instance. The low value in the blood from the uterine vein apparently results from local tissue acidosis caused by the tumor. G. M. Kosolapoff

SHMUNDAK, Prof. D. Ye.

Hd., Khar'kov Gynecological Clinic, Ukr. Roetgeno-Radiological, & Oncoloical Inst. -c1949-. Dr. Med. Sci.; Akusher i Ginekol., No. 4, 1949. "Early Diagnosis of Cancer of the Uterus," Sov. Med., No. 6, 1949.

SHMUNDAK, D. E., Prof.

Head, Department of obstetrics and gynecology, Kharkov Medical Institute

"Effect of season and temperature upon the biological reaction in an early diagnosis of pregnancy with the use of frogs," by B.A. Vargapetov, M.D. Sheynerman and D.A. Novitskiy, Akush. i gin. no.4:73-75 Jl-Ag 1952

SHMUNDAK, D. YE., PROF., PAVLENKO, S. I., KRASTINA, YE. M.

Uterus

Treatment of precancerous conditions of the cervix uteri. Sov. med. 16, No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, September 1952. Unclassified.

SHMUNDAK, D.Ye., professor; VARTAPETOV, B.A., kandidat meditsinskikh nauk; SHEYNERMAN, M.D., kandidat meditsinskikh nauk; MILOVSKIY, D.P.; GULYAYEVA, V.I.

A new method for the determination of estrogens in a woman's system. Akush. i gin. no.4:66-69 Jl-Ag '55. (MLRA 8:11)

1. Iz ginekologicheskogo otdeleniya (zav.prof. D. Ye. Shmundak) Oblastnoy bal'neologicheskoy bol'nitsy i fiziologicheskogo otdela (zav.kandidat meditsinskikh nauk B.A.Vartapetov) Ukrainskogo instituta eksperimental'noy endokrinologii.
(ESTROGENS, determ.
method, in etiol.diag. of menstruation disord.)
(MENSTRUATION DISORDERS, diag.
etiol. diag.,estrogen determ. method)

SHMUNDAK, D.Ye., prof. (Khar'kov)

Androgenic hormones in gynecological practice. Probl.endok.i gorm. 5 no.6:101-109 N-D '59. (MIRA 13:5)
(ANDROGENS ther.)
(GYNECOLOGICAL DISEASES ehter.)

SHMUNER, A., inzh.

Honeycombed glass plastics for construction. Bud.mat.i konstr. 1 no.1:42-46 0 '59. (MIRA 13:8)
(Glass reinforced plastics)

TSYPKINA, O.Ya., kand.tekhn.nauk; SHMUNER, A.Sh., inzh.

Glass reinforced plastics are new building materials. Sbor. trud. IUZHNII no.2:142-147 '59. (MIRA 13:9)

1. Yuzhnyy nauchno-issledovatel'skiy institut po stroitel'stvu.
(Glass reinforced plastics)

SHM[illegible], [illegible]

[illegible], [illegible]: "Observations of the [illegible] of dysentery under [illegible] conditions." [illegible] Kharkov Medical Inst. Khar'kov, 195[illegible]. (Dissertation for the Degree of Candidate in Medical Sciences)

Source [illegible] No. 2[illegible] 195[illegible] Moscow

Shmuness, V. A.

USSR/Medicine - Dysentery FD-1640

Card 1/1 : Pub. 148-20/28

Author : Shmuness, V. A.

Title : Observations on the epidemiology of Sonne dysentery

Periodical : Zhur. mikro, epid. i immun. 7, 81-82, Jul 1954

Abstract : The seasonal, age, foci, and other epidemiological characteristics of Sonne dysentery are discussed. A comparison is made between this data and similar data for Flexner dysentery. No references are cited.

Institution : The Sanitary-Epidemiological Station of the City of Kadiyevka (Head Physician- N. F. Shapovalova)

Submitted : October 12, 1953

SHMUNESS, V.A.; ROT, L.Ya.

Epidemiological data on Botkin's epidemic hepatitis. Zhur. mikrobiol.epid. i immun. 29 no.4:15-20 Ap '58. (MIRA 11:4)

1. Iz Zaporozhskogo instituta usovershenstvovaniya vrachey i Oblastnoy sanitarno-epidemiologicheskoy stantsii.
(HEPATITIS, INFECTIOUS, epidemiology,
(Rus)

SHMUNESS, V.A.

Water-borne outbreak of dysentery. Zhur.mikrobiol.epid. i immun. 29 no.4:83-85 Ap '58. (MIRA 11:4)

1. Iz Zaporozhskogo instituta usovershenstvovaniya vrachey imeni Gor'kogo.
(DYSENTERY, BACILLARY, epidemiology,
water-borne outbreak (Rus)

SHUNESS, V.A.

Spread of Botkin's epidemic hepatitis; works of Prof. V.A. Bashenin and his collaborators. Zhur.mikrobiol.epid. i immun. 29 no.5:110-113 My '58 (MIRA 11:6)

1. Iz Zaporozhskogo instituta usovershenstvovaniya vrachey.
(HEPATITIS, INFECTIOUS, epidemiology, in Russia (Rus))

SHMUNESS, V.A.

Some features of the seazonal increase of epidemic hepatitis morbidity. Vop.virus. 4 no.6:714-717 N-D '59. (MIRA 13:3)

1. Zaporozhskaya oblastnaya sanitarno-epidemiologicheskaya stantsiya.
(HEPATITIS, INFECTIOUS epidemiol.)

SHMUNESS, V.A.

Change in the type composition of the causative agents in children with chromic dysentery. Zhur. mikrobiol. epid i immun. 31 no.6:110 Je '60. (MIRA 13:8)

1. Iz kafedry mikrobiologii Zaporozhskogo instituta usovershenstvovaniya vrachey.

(SHIGELLA)

SHMUNESS, V.A.

Epidemiology of Botkin's disease in rural regions. Zhur. mikrobiol. epid. i immun. 32 no.6:14-17 Je '61. (MIRA 15:5)

1. Iz Zaporozhskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.
(HEPATITIS, INFECTIOUS)

SHMUNESS, V.A.

Analysis of infections within the living quarter in epidemic hepatitis; preliminary communication. Zhur.mikrobiol.epid.i immun. 32 no.2:58-61. F '61. (MIRA 14:6)

1. Iz Zaporozhskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.
(HEPATITIS, INFECTIOUS)

SOV/138-58-12-3/17

AUTHORS: Sandomirskiy, D. M. and Shmurak, I. I.

TITLE: Concentration of Latex by Electrodecantation (Kontsentrirovaniye lateksa elektrodekantatsiyey)

PERIODICAL: Kauchuk i Rezina, 1958, Nr.12, pp 8 - 10 (USSR)

ABSTRACT: Recently this method has been used for concentrating natural latex (Ref. 1 - 5). The authors investigated the effect of the rate of the current, the voltage gradient in the bath, the number of diphragms in the same, the viscosity of the latex, and the electro-kinetic potential on the process of electrodecantation. Three types of natural latex were tested: (A) non-concentrated natural latex, (B) dissolved concentrate obtained by centrifugation ("Kvaliteks") and (C) dissolved concentrate of vulcanised latex ("Revul'teks"). The properties of these latexes are tabulated. Fig.1 shows the setting up of the apparatus. The latex is subjected to the action of an electric current of defined parameters, and the changes in the concentration of the latex in the top layer in relation to time are defined. The time during which the content of dry substance of the latex in the top layer increases to 55% is taken as characteristic rate

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Concentration of Latex by Electrodecantation

of concentration. The dependence of the rate of concentration on the rate of the current at a constant gradient is shown in Fig.2, and the dependence of the rate of concentration of the latexes B and C on the voltage gradient at constant current rate in Fig.3. Fig.4: the effect of intermediate diaphragms on the rate of concentration of the latex. In these experiments, the rate of concentration was defined by the increase of the concentration in the top layer of the latex. It is, however, necessary to know the concentration at all heights of the bath. A test was, therefore, carried out in which samples of latex were taken at all depths of the latex (Fig.5), and it can be seen that the concentration of the initial latex is maintained at approximately 1/3rd of the height of the bath. Fig.6 gives the kinetic concentration curves of all investigated latexes. These tests were taken at various rates of current. It was also found that intermediate diaphragms increase the rate of concentration of the latex. this is due to the shortening of the path

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Concentration of Latex by Electrodecantation

of the globules. There are 6 Figures, 1 Table and 5 English References.

ASSOCIATION: Institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Institute of Chemical Technology im. M. V. Lomonosov)

Card 3/3

SHMURAK, I.I.

AUTHORS: Zaylingol'ts, V.L., Zarbetov, L.I., Epshteyn, V.I., Ulina, A.V., Peyzner, A.E., Bogoslavskiy, D.B., Bugrova, G.A., Basin, V. Ye. and Shmurak, I.I.

TITLE: Preparation of Latexes Obtained by the Copolymerisation of Butadiene and 2-Methyl-5-Vinylpyridine, and Their Use for Impregnating Tyre Cords (Polucheniye lateksov sopolimerizatsiyey butadiyena s 2-metil-5-vinilpiridinom i primeneniye ikh dlya propitki shinnogo korda)

PERIODICAL: Kauchuk i rezina, 1959, Nr 3, pp 6 - 9 (USSR)

ABSTRACT: The addition of copolymers of butadiene and 2-methyl-5-vinylpyridine, and also of tripolymers consisting of butadiene-styrene, and 2-methyl-5-vinylpyridine, increases the bond strength between the rubber and the cord by 80 to 100% (Ref 5 - 8). The copolymerisation of butadiene and 2-methyl-5-vinylpyridine was investigated and the obtained latexes were evaluated as impregnating agents. The two compounds were copolymerised at 5° and 50°C. In both tests salts of synthetic fatty acids were used as emulsifiers and "Leukanol" was added as stabiliser. Potassium persulphate was used as polymerisation initiator and 0.01 to 0.005 weight/volume of Trilon B when the

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process was carried out at 50°C (isopropylbenzene hydroperoxide was used when the copolymerisation proceeded at 5°C). Furthermore, 0.001% methyl-p-aminophenol was added as polymerisation inhibitor. Results in Table 1 indicate that the addition of the inhibitor does not affect the rate of copolymerisation. The reaction was allowed to proceed (at both process temperatures) until a 75 to 80% conversion was reached after 8 to 12 hours (Figure 1). The unreacted monomers were separated from the latex by vacuum distillation and 2% of Neozone D added to the prepared latex. The effect of the addition of Diproxid (diisopropyl xanthogen disulphide) on the hardness of the copolymer was tested (Figure 2). Both types of the latex showed good mechanical properties. The latex was further used for impregnating viscose and polyamide cords

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in conjunction with rubbers based on natural, butadiene (SKB) and with butadiene-styrene (SKS-30AM) rubbers. The quantity of 2-methyl-5-vinylpyridine contained in the latex affects the bond strength between the viscose cord and the rubbers (Figure 3). Optimum strength of the bond is achieved when resorcinol formaldehyde resins are added to the copolymer (Figure 4). Improved physical and mechanical properties of the adhesive films result when 10% by weight of 2-methyl-5-vinylpyridine are added (Table 2). The effect of various quantities of resorcinol-formaldehyde resins on the strength of bonding between the cord and the rubber was investigated (Figures 5a, б and в). Changes in the plasticity of the polymer affect the physical and mechanical properties of the adhesive film and the bonding between the cord and the rubbers. Results of relevant experiments are shown in Figure 6. The physical and mechanical properties of the adhesive are improved and the strength of bonding is increased when lowering the polymerisation temperature (Table 3).

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Table 4 gives the data on the strength of bonding of the viscose cord with various tyre rubbers. The strength of bonding was particularly satisfactory when natural rubber was used and when the latexes were polymerised at 5°C.
There are 7 figures, 4 tables and 10 references of which 8 are English and 2 Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut monomerov dlya SK; Nauchno-issledovatel'skiy institut shinnoy promyshlennosti; Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka; Yaroslavskiy shinnyy zavod (Research Institute for Monomers for the Use in Synthetic Rubber; Research Institute for the Tyre Industry; All-Union Research Institute for Synthetic Rubber; Yaroslavl' Tyre Factory)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549810010-2"

S/190/60/002/006/001/012
B015/B064

AUTHORS: Berlin, A. A., Uzina, R. V., Shmurak, I. L.

TITLE: On Some Factors Influencing the Adhesion of Rubber on the Tissue Fiber, Steeped With Latex Albumin Mixtures

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 6, pp. 832-837

TEXT: The adhesive power between rubber and tissue is of special importance in the production of tissue-reinforced rubber products such as car tires, bands, assembly lines etc. To increase the adhesive power, the cotton- or man-made fiber tissue is steeped with albumin containing latex mixtures in the USSR. A method of producing a water-soluble modification of keratin (keratein) from industrial waste products was developed (Ref. 6) in the laboratoriya vysokomolekulyarnykh soyedineniy MTIMMP (Laboratory of Highmolecular Compounds MTIMMP). The waste products are treated with strong reduction-, or oxidizing agents, with the -S-S- cystine bond of the keratin macromolecules being torn; thus, the water-soluble keratein forms. Investigations carried out by the authors (Ref. 7)

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On Some Factors Influencing the Adhesion of Rubber on the Tissue Fiber, Steeped With Latex Albumin Mixtures

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B015/B064

showed already that keratin is a complete substitute for casein that has hitherto been used for the above-mentioned steep solutions. The present paper mentions some of the results obtained on the behavior of keratin and other latex albumin mixtures used for tissue steeping. The adhesive power of rubber on steeped tissue may be assumed to depend on the content of amino acids with polar side chains in the albumin molecule. In this respect, keratin does not very much differ from casein and albumin (Table 1, values of adhesive power between СКБ-(SKB-), СКС-30АМ (SKS-ZOAM-), and НК-(natural-) rubber and tissue steeped with casein-, keratin and albumin containing mixtures respectively). Since albumins represent polymeric electrolytes, their properties are influenced by the pH. Experiments showed that an increase of the pH of the steeping mixtures reduces the adhesive power of rubber on steeped tissue. The increase in the ionization of the albumin molecules taking place in alkaline solutions was assumed to bring about a directioning of the molecule chain and formation of a net structure. These assumptions were confirmed by determining the value b/a (Table 2) (b = longer axis of the extended molecules, a = short axis), as well as by measurements of the flow time (in dependence

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On Some Factors Influencing the Adhesion of Rubber on the Tissue Fiber, Steeped With Latex Albumin Mixtures

S/190/60/002/006/00?/012
B015/B064

on pressure) on casein- and keratin solutions through a capillary. The "longer" the albumin molecule is the longer will the flow time be. The poor adhesive power of rubber on tissue steeped with solutions of a higher pH is due to a deterioration of the mobility of the "extended" albumin molecule. There are 4 figures, 2 tables, and 15 references: 9 Soviet, 4 US, 1 German, and 1 Austrian.

ASSOCIATION: Moskovskiy tekhnologicheskiy institut myasnoy i molochnoy promyshlennosti (Moscow Technological Institute of the Meat- and Milk Industry). Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

SUBMITTED: January 23, 1960

Card 3/3

UZINA, R.V.; SHMURAK, I.L.; DOSTYAN, M.S.; KALININA, A.A.

Effect of the compounding formula of the resorcinol-formaldehyde resin used in compositions for cord impregnation and the conditions of its condensation on the adhesive strength of rubber-cord systems. Kauch.i rez. 20 no.7:24-28 Jl '61. (MIRA 14:6)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti. (Tire fabrics—Testing) (Phenol condensation products)

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S/138/62/000/012/005/010
A051/A126

AUTHORS: Boguslavskiy, D. B., Shmurak, I. L., Borodushkina, Kh. N., Berlin, A. A., Uzina, R. V.

TITLE: The effect of active-polymer additions to case mixes on the strength of adhesion in rubber-cord systems

PERIODICAL: Kauchuk i rezina, no. 12, 1962, 15 - 18

TEXT: The effect was studied of carboxyl-containing and methylvinylpyridine rubber, and of chlorosulfopolyethylene polymer additions to case mixes based on 100% butadiene-styrene oil-filled rubber on the adhesive strength of systems with viscous cord saturated with various synthetic latexes. The introduction of carboxyl-containing rubber into БСК (BSK) case mixes increases the adhesive strength continuously in the systems with viscous cord saturated with СКС -30-1 (SKS-30-1) and СКД-1 (SKD-1) latex compositions. Maximum adhesive strength is obtained for rubbers, where the BSK is completely replaced by the SKS-30-1 rubber. Additions of carboxyl-containing SKS-30-1 rubber affect the adhesive strength of the rubber-cord even more in the case of cord saturated with

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The effect of active-polymer additions to...

methylvinylpyridine compositions. Obtained data showed that methylvinylpyridine latexes of high-temperature polymerization do not offer satisfactory adhesive strength of the cord to rubber, based on butadiene-styrene oil-filled rubber. The effectiveness of the additions increases with an increase in the carboxyl-group content in the adhesive, and pyridine-group content in the case rubber. Experimental results have led to the conclusion that a further increase of the adhesive strength of rubber to cord can be accomplished by introducing reactive groups into the adhesive and case mix which, in turn, increase the inter-molecular and chemical interaction at the contact region. Formation of a connection, at the contact region, such as:

$$\begin{matrix} R \\ \diagup \\ CH_3 \end{matrix} N + R_1 - Cl \quad \begin{matrix} R \\ \diagup \\ CH_3 \end{matrix} N - R_1 \; {}^{+}Cl^{-}$$

in the case of combinations of pyridine adhesives and rubber containing additions of chlorosulfopolyethylene or other chloro-containing polymers, is assumed possible. Thus, it is further concluded that the use of an adhesive containing functional groups in combination with active additions in the case mixes leads

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L 2556-66 EWT(m)/EPF(c)/EWP(v)/EWP(j)/T WW/RM

ACCESSION NR: AP5024106 UR/0138/65/000/009/0023/0026

678.7:539.612

AUTHOR: Shmurak, I. L.; Uzina, R. V.; Berlin, A. A.

TITLE: Certain factors determining the chemical bond formation on the adhesive-substrate boundary

SOURCE: Kauchuk i rezina, no. 9, 1965, 23-26

TOPIC TAGS: adhesion, adhesive, substrate, interpolymerization

ABSTRACT: Examination of factors determining chemical bond formation on the adhesive-substrate boundary with a view toward increasing the adhesion strength of polymer systems resulted in the following conclusion: A high adhesion strength can be attained as a result of interpolymerization via the functional groups of the adhesive and substrate. "Onium" interpolymerization, which proceeds with a low activation energy and forms no by-products, is of particular interest. This conclusion was confirmed experimentally for cord-adhesive-rubber systems in which, e.g., the adhesive contained butadiene-acrylonitrile copolymers with varying component ratios and the rubber contained chlorosulfonated polyethylene. The close contact between the adhesive and substrate macromolecules, required for interpolymerization, can be achieved by making adhesive macromolecular chains sufficiently flexible. This, in

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ACCESSION NR: AP5024106 6

turn, can be done by reducing the polar group content in the adhesive copolymers. [BO]
Orig. art. has: 1 figure and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry); Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AN SSSR)

SUBMITTED: 00 ENCL: 00 SUB CODE: OCGC

NO REF SOV: 014 OTHER: 000 ATD PRESS: 4108

Card 2/2

PERMOGOROV, V.I.; LAZURKIN, Yu.S.; SHMURAK, S.Z.

Study of the complexes of nucleic acids with acridine orange by the optical activity dispersion method. Dokl. AN SSSR 155 no.6: 1440-1443 Ap '64. (MIRA 17:4)

1. Predstavleno akademikom A.P. Aleksandrovym.

L 55990-65
ACCESSION NR: AP5015497

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621.314.21/.23.023

4
B

AUTHOR: Shmuratko, Yu. D.

TITLE: Instrument for measuring parameters of oscillatory circuits. Class 21, No. 170088

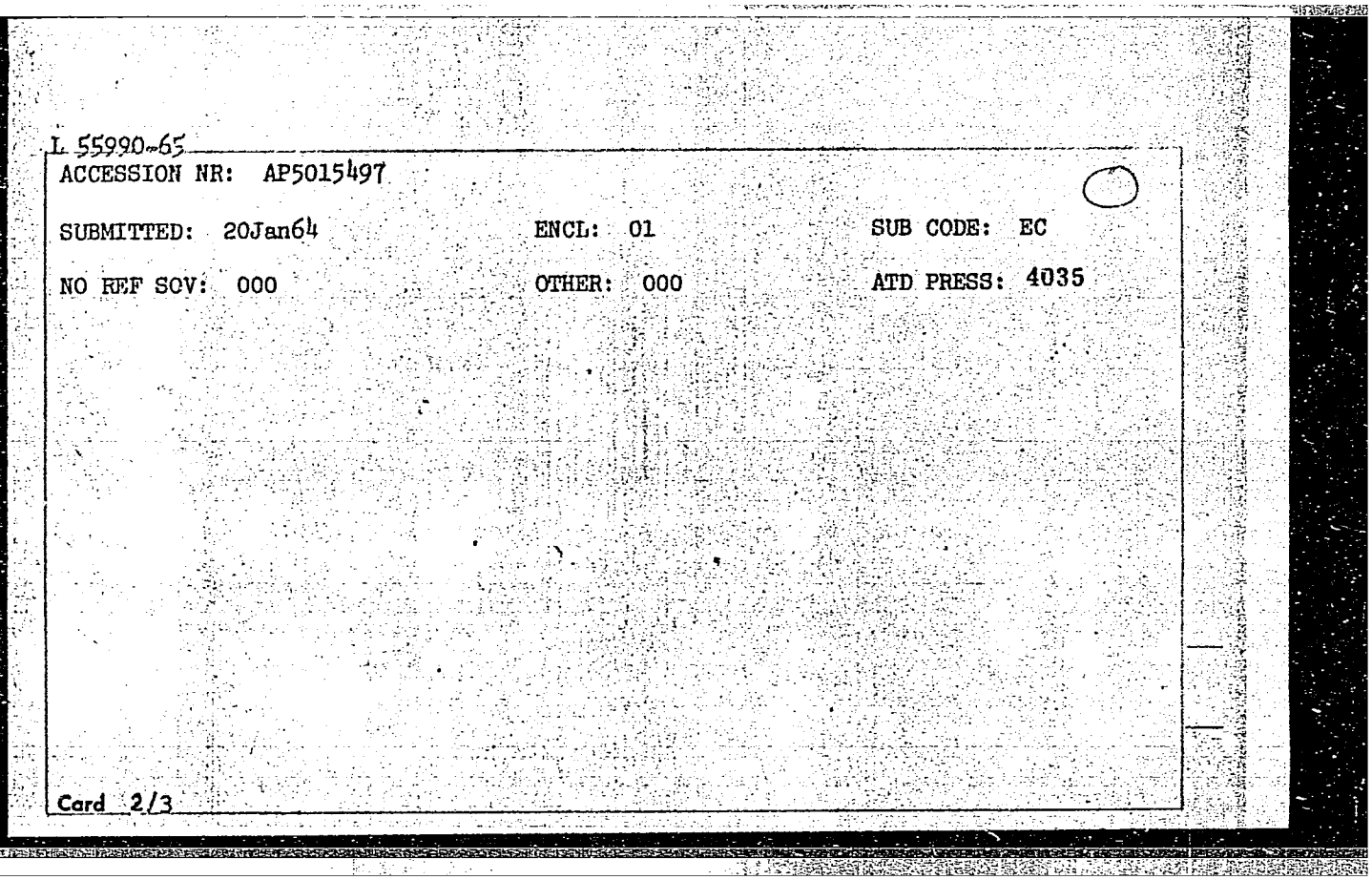
SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 8, 1965, 28

TOPIC TAGS: oscillatory circuit, oscillatory circuit measurement, printed circuit measurement

ABSTRACT: The proposed instrument (see Fig. 1 of Enclosure) contains a sweep oscillator, an oscillograph fitted with a detector section, and a coupling element. To facilitate the measurement of printed-circuit parameters, a section of coaxial line with shorted ends and center stub is used as the coupling element. Orig. art. has: 1 figure. [DW]

ASSOCIATION: Institut matematiki SO AN SSSR (Institute of Mathematics, SO AN SSSR)

Card 1/2



L 55990-65

ACCESSION NR: AP5015497

SUBMITTED: 20Jan64 ENCL: 01 SUB CODE: EC

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4035

Card 2/3

[redacted]

[illegible] of aggression and hostility. Komm. Vooruzh. Sil 46 [illegible] Ag '65. (MIRA 18:9)

LABUTIN, A.L.; KLEBANSKIY, A.L.; TSUKERMAN, N. Ya.; KARTSEV, V.N.; TRENKE, Yu.V.; MAL'SHINA, L.P.; BOROVIKOVA, N.A.; KARELINA, G.G.; ROZHKOV, Yu. P.; Prinimali uchastiye: SHMUREY, K.S.; ABOLINA, O.P.; KONSTANTINOVA, A.L.; SELIVANOVSKAYA, G.A.

"Liquid nairit," a new material for rubberizing. Kauch. i rez. 20 no.6:5-8 Je '61. (MIRA 14:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva.
(Neoprene)
(Rubberized fabrics)

BERMAN, L.D., doktor tekhn.nauk; LABUTIN, A.L., kand.tekhn.nauk; FUKS, S.N., kand.tekhn.nauk; MAL'SHINA, L.P., inzh.; SHMUREY, K.S., inzh.

Rubberizing of the tube plates of a steam turbine condenser with "liquid" nairit. Elek. sta. 32 no.7:6-10 Jl '61. (MIRA 14:10)
(Steam turbines) (Neoprene)

[illegible], [illegible] nauk; [illegible], [illegible], veterin. vrach; [illegible], [illegible], veterin. [illegible]; [illegible], [illegible], veterin. vrach; GOLUBITSKAYA, S.B., student; [illegible], [illegible], student; SINKEVICH, [illegible], student; SHMUREY, [illegible], student

Results of testing phenothiazine against warble fly infestation of cattle. [illegible] nauka 38 no.2:[illegible] F '61.

(MIRA 1[illegible]:1)

1. [illegible] nauchno-issledovatel'skiy veterinarnyy institut (for [illegible]). [illegible] skiy sel'skokhozyaystvennyy tekhnikum (for Zotov). 3. Tukhorichskiy veterinarnyy uchastok, Kholmskogo rayona, Novgorodskoy oblasti (for Kozlov, Baykov). 4. Volkovyskiy veterinarnyy tekhnikum (for [illegible], Golubitskaya, Boreychenko, Sinkevich, Shmurey).

MIKHAYLOVA, Vera Ivanovna, inzh.; ZHURBINA, Zinaida Isaakovna, inzh.; SHMURNOV, I.V., nauchnyy red.; IONOV, V.N., red.; NESMYSLOVA, L.M., tekhn. red.

[Reading of mechanical drawings]Chtenie chertezhei v mashinostroenii. Moskva, Proftekhizdat, 1962. 215 p. (MIRA 15:12)
(Mechanical drawing)

124-57-2-2179

Translation from: Referativnyy zhurnal. Mekhanika 1957, Nr 2, p 101 (USSR)

AUTHOR: Shmurnov, K. V

TITLE: On the Calculation of Axisymmetrical Parabolic Shells (O raschete osesimmetrichnykh parabolicheskikh obolochek)

PERIODICAL: Sb. tr. Mosk. inzh.-stroit. in-ta, 1954 Nr 8, pp 66-79

ABSTRACT: Linear differential equations are derived for the symmetrical deformation of shells of variable thickness traced on second-order surfaces. Special cases of these equations are indicated, e. g., the flexure equations of cylindrical, conical, and spherical shells. Thickness variations in the shells for which the solution of the problem becomes simple are determined. It is shown, for example that the calculation of a conical shell of circular cross section and with a linearly varying thickness which reduces to zero at the apex turns into the calculation of a cylindrical shell of constant thickness. The flexure of a parabolic shell is analyzed in detail. The problem is reduced to the solution of a Bessel equation. It is shown that in a region sufficiently distant from the pole, asymptotic expansions of the functions can be used with an accuracy that does not exceed

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124-57-2-2179

On the Calculation of Axisymmetrical Parabolic Shells (cont.)

the accuracy of the theory of thin shells. Bibliography: 15 references.

A. V. Sachenkov

1. Structural shells--Mathematical analysis

Card 2/2

OTRESHKO, Anatoliy Ivanovich, doktor tekhnicheskikh nauk, professor, redaktor; IVYANSKIY, A.M., kandidat tekhnicheskikh nauk, dotsent; SHMURNOV, K.V., kandidat tekhnicheskikh nauk, dotsent; ALEKSEYEV, V.M., redaktor; KOBYLYAKOV, L.M., redaktor; PERESYPKINA, Z.D., tekhnicheskiy redaktor; BALLOD,A.I., tekhnicheskiy redaktor.

[Hydraulic engineering structures] Inzhenernye konstruktsii v gidromeliorativnom stroitel'stve. Pod obshchei red. A.I.Otreshko. Moskva, Gos.izd-vo sekhoz. lit-ry, 1955. 551 p. (MLRA 9:1)
(Hydraulic engineering)

124-58-9-10275

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 124 (USSR)

AUTHOR: Shmurnov, K. V.

TITLE: On the Shape of Drop-shaped Reservoir Tanks (O forme kaplevidnykh rezervuarov)

PERIODICAL: Sb. tr. Mosk. inzh.-stroit. in-t, 1957, Nr 17, pp 86-96

ABSTRACT: The middle surface of the shell of a drop-shaped reservoir tank is constructed for a given volume and a given excess pressure head. The author determines the shape of the drop-shaped tank starting from the condition of constancy and the equality of the meridional and peripheral stresses for a generic point of the shell (which is a body of revolution) under the action of a hydrostatic pressure. The problem is solved by means of trigonometric series. There are many typographical errors.

Ye. I. Buzin

1. Structures--Design

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